(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: **06.12.2006 Bulletin 2006/49**

(51) Int Cl.: **G11B** 7/135 (2006.01)

(11)

(43) Date of publication A2: **25.07.2001 Bulletin 2001/30**

(21) Application number: 01101092.3

(22) Date of filing: 18.01.2001

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

Designated Extension States:

AL LT LV MK RO SI

(30) Priority: 21.01.2000 JP 2000017740

(71) Applicant: SONY CORPORATION Tokyo 141 (JP)

(72) Inventor: Ando, Nobuhiko Shinagawa-ku, Tokyo (JP)

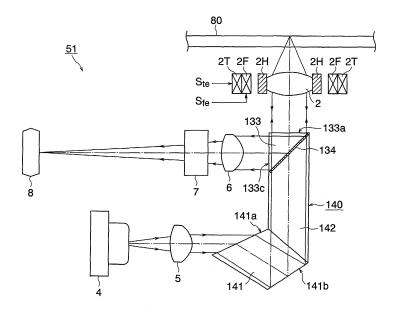
(74) Representative: Körber, Wolfhart et al Patent- und Rechtsanwälte Mitscherlich & Partner, Sonnenstrasse 33 80331 München (DE)

(54) Optical element and optical pick-up

(57) An optical pick-up able to reduce a change of an optical axis of a light beam emitted to a photodetector when the optical element is tilted. An optical element in the optical pick-up is struck with an incident light beam from a first surface (141a) of a first prism (141), reflects the light beam refracted at the first surface at the second surface (141b), refracts the reflected light beam at the joined surfaces of the first prism and the second prism (140), and further refracts the refracted light beam at the

first surface of the second prism to form an emitted light beam. The direction of the incident light beam and the direction of the emitted light beam perpendicularly intersect in the same plane. The optical element is struck with the light beam from the direction of the light beam emitted from the first surface of the second prism, reflects the light beam refracted at the first surface at the film (134), refracts the reflected light beam at a third surface, and emits it in a direction opposite to the direction of the incident light beam to the photodetector.

FIG. 3





EUROPEAN SEARCH REPORT

Application Number EP 01 10 1092

	DOCUMENTS CONSIDEREI					
Category	Citation of document with indicatio of relevant passages	n, where appropriate,		elevant claim	CLASSIFICATION OF THE APPLICATION (IPC)	
Х	PATENT ABSTRACTS OF JAP vol. 1997, no. 07, 31 July 1997 (1997-07-3 -& JP 09 080212 A (CANO 28 March 1997 (1997-03- * abstract *	1) N INC),	18- 30-	14, -23, -32	INV. G11B7/135	
Y			24	8, -17, -29, -38		
	-& DATABASE WPI Week 19 Derwent Publications Lt 1997-248950 XP002402417 * abstract *					
Y	PATENT ABSTRACTS OF JAP vol. 013, no. 087 (P-83 28 February 1989 (1989- -& JP 63 269325 A (PION CORP), 7 November 1988 * abstract; figure 2 *	5), 02-28) EER ELECTRONIC	24	8, -17, -29, -38	TECHNICAL FIELDS SEARCHED (IPC)	
A	GB 2 329 065 A (* SAMSU LIMITED) 10 March 1999 * the whole document *	NG ELECTRONICS CO (1999-03-10)	1-3	38	G11B	
А	US 5 311 496 A (WHITEHE 10 May 1994 (1994-05-10 * the whole document *		1-3	38		
	The present search report has been de	awn up for all claims Date of completion of the search			Examiner	
	The Hague	26 October 2006		Anr	nibal, Stewart	
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background		E : earlier patent o after the filing d D : document cited L : document cited	T: theory or principle underlying the E: earlier patent document, but publ after the filing date D: document cited in the application L: document cited for other reasons			
	-written disclosure mediate document	& : member of the document	same pa	atent family	y, corresponding	

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 01 10 1092

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-10-2006

JP 09080212 A 28-03-1997 NONE JP 63269325 A 07-11-1988 JP 1935229 C 26-05-1995	Patent document cited in search report		Publication date		Patent family member(s)		Publication date
JP 6064750 B 22-08-1994 GB 2329065 A 10-03-1999 CN 1210333 A 10-03-1999	JP 09080212	Α	28-03-1997	NONE			
US 5311496 A 10-05-1994 DE 4336546 A1 19-05-1994 JP 6208014 A 26-07-1994 JP 8001483 B 10-01-1996	JP 63269325	Α	07-11-1988			•	
JP 6208014 A 26-07-1994 JP 8001483 B 10-01-1996	GB 2329065	Α	10-03-1999	JP	11154344	Ä	08-06-1999
	US 5311496	Α	10-05-1994	ĴΡ	6208014 8001483	A B	26-07-1994

FORM P0459

 $\stackrel{\bigcirc}{\mathbb{H}}$ For more details about this annex : see Official Journal of the European Patent Office, No. 12/82